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ABSTRACT

Part I summarizes data on the final version of the Student Self-Report, an affective, multiple-chioce questionnaire developed to measure the kinds of behavioral and attitudinal chanqes which elementary counselors most often attempt to produce when providing services to students in Gradeg 3-6. Part I contains reliability and validity data for the instrument, a model of affective development resulting from a path analysis done on these data, a measure of the traits exhibited by students referred for counseling services, and a measure of the effects of counseling services. The measure does not consistently show gains for students receiving counseling services. Nevertheless the data provide insight into the development of affective problems in elementary children and the way in which counseling programs address these concerns. A parallel instrument was developed to measure similar affective content for children in Grades 1-2. Part II presents validity and reliability data collected in developing a pilot version of the Student Self-Report. In general, results suggest that this instrument measures the same attitudes and behaviors measured by the upper level instrument. However, the instrument is difficult for primary children and invalid results are produced for many of these students. (Author/AL)

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RESEARCH INTO THE DEVELOPMENT OF AFFECTIVE INSTRUMENTS IN THE LANSING SCHOOL DISTRICT

Funded by the National Institute of Education
GRANT NUMBER NIE-G-80-0031

FINAL REPORT
PART 1

The Development of an Instrument to Measure the Effect of Counseling Services on Elementary Children in Grades Three Through Six

May 14, 1981

TM 810 886 (1 of 2)

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PREFACE

This is Part 1 of the final report of the NIE funded project, Research into the Development of Affective Instruments in the Lansing School District. This project, funded from February 15, 1980 - February 14, 1981, provided monies to investigate the development of two affective measures. The instrument described in this report was designed to measure the effects of counseling services on students in grades three through six. The other measure was designed for students in grades one and two and is described in Part 2 of this report.

This project was managed by Robert Young, Office of Evaluation Services, Lansing School District. The administrator ultimately responsible for the project was Dr. Grace Iverson, Director of the Office of Evaluation Services. Ms. Ronda Hunter and Dr. John Hunter of Michigan State University were responsible for much of the research described in this report; however, the Office of Evaluation Services is ultimately responsible for its contents.

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ABSTRACT

The Student Self-Report is a 35 item, affective, multiple choice questionnaire. The instrument was developed to measure the kinds of behavioral and attitudinal changes which elementary counselors most often attempt to produce when they provide services. The instrument has three subscales measuring self-concept, classroom behavior and getting along with others. The instrument as a whole, and two of the subscales, self-concept and classroom behavior, have sufficient reliability and validity for use in measuring differences between groups of students. The third subscale, getting along with others, includes items of widely differing content and should not be used by itself to evaluate group differences.

The instrument was administered to selected students in nine elementary schools served by counselors. A cluster analysis of the instrument was done, and the items were grouped into seven content clusters. A path analysis was also completed with these data. This analysis suggested a model for the development of self-concept.

Finally, the instrument was used to measure the impact of small group and individual counseling services. Significant effects were found for these services in increasing classroom compliance and positive attitudes toward making friends. These data were inconsistent, however, with the instrument's measure of program change from the previous year. This inconsistency suggested that the instrument shares a problem with other affective measures we have used; it is somewhat insensitive to program effect. Nevertheless, the results of the study provide insight into the development of affective problems in elementary children and the way in which counseling programs address these concerns.

THE DEVELOPMENT OF AN INSTRUMENT TO MEASURE THE EFFECTS OF COUNSELING SERVICES ON ELEMENTARY SCHOOL CHILDREN IN GRADES THREE THROUGH SIX

The research described in this report reflects efforts by the Lansing Scool District, Office of Evaluation Services, to develop affective instruments suitable for measuring the effects of elementary counseling services on students in grades three through six. These research activities were begun because of difficulties we have encountered in measuring affective change. Prior to the development of the measure described in this paper, the Office of Evaluation Services had worked with several "counseling type" projects for which the objective data showed no change, while the staff directly involved with the project - counselors, teachers, parents and building administrators argued that the program had produced major changes in students that the instruments failed to measure.

In the winter of 1977, the Lansing School District received a special allocation of funds from the Michigan Legislature for providing counseling services to students in elementary school buildings. This grant included an evaluation component which required the identification or development of affective measures for evaluating the program. A review of available instruments, however, revealed no instruments which were both technically sound, and also measured the types of changes counselors expected to produce. For example, the Elementary School Test Evaluation (1970) published by the Center for the Study of Evaluation rates tests on the basis of measurement validity, examinee appropriateness, administrative usability and normed technical exellence. One hundred and ten affective instruments are listed for the first, third and fifth grade. All but four of these tests were rated "poor" in the area of normed technical excellence, and all but thirteen were rated "poor" in the area of measurement validity.

Although several technically sound scales are available, i.e., Coopersmith's (1976) Self-Esteem Inventory and the Piers Harris Children's Self-Concept Scale, these scales tend to measure global, stable personality traits. Counselors, on the other hand, provide relatively short term intervention - we have found it to consist of five to twenty individual or small group sessions - and focus on rather specific problems which are interfering with the students' performance in school. We found that most of the counselors' time is spent in responding to classroom problems, i.e., fighting, non-compliance, and "attitude problems". Counselors also stressed that they work on self-concept and on helping students build relationships with their peers.

We were not convinced that the type of intervention provided by counselors is appropriately measured by general personality scales. Nevertheless, interviews with counselors suggested that observable, and therefore measurable, changes were reliably produced as a result of the counselors' activities. Therefore, a pilot student self-report instrument was developed to evaluate the project. Reliability and factor analysis data collected on this instrument showed the instrument

to be a stable, valid measure which reflected behavioral changes resulting from counseling services. After this evaluation was completed, however, several concerns remained which are addressed by the results outlined in this paper. First, the data reported by Flood, Petersen and Young (1979), offered only a global measure of behavioral and attitudinal changes, and did not pinpoint the specific areas in which counselor intervention was most effective. Second, our experience in evaluating the Counseling Project showed that the pilot instrument missed several important affective areas addressed by counselors. For example, the test failed to measure student's positive social contacts with other students and the extent to which students liked other people in their environment. Finally, the factor analysis of the pilot instrument failed to discriminate between several types of items which seemingly tested different traits.

This paper presents data collected in our efforts to develop an affective measure which addressed these concerns. It contains reliability and validity data for the final version of the Student Self-Report, a model of affective development resulting from a path analysis done on these data, a measure of the traits exhibited by students referred for counseling services, and a measure of the effects of counseling services. We found that the measure did not consistently show gains for students receiving counseling services. Nevertheless, the data provide valuable information on the development of affective traits, the measurement of these traits, and the way in which short term, school based, affective programs serve students with affective needs.

Methods

Subjects

The subjects for this study were third, fourth, fifth and sixth grade students in nine schools in the Lansing School District. These schools had three grade configurations. Five of the schools served students in grades K-4, three of the schools served students in kindergarten and the fifth and sixth grades, and one of the schools served students in grades K-3. In the lower elementary schools one third and one fourth grade classroom were randomly selected for testing. In the upper elementary schools two fifth and two sixth grade classrooms were randomly selected for testing. In addition, counselors tested students who were served regularly, but who were not included in the classroom testing. Complete pre-test data were received for 595 students, 448 of these students had complete data for both the pre and the post-test for at least one of the subscales.

Instruments

The primary instrument for this study was the Student Self-Report, a thirty-five question, multiple choice questionnaire. An example of a

question from the instrument is shown in Figure 1 below. The entire instrument is included in Appendix A. Each item was scored as a Likert Scale. The most positive of the 4 responses was scored as a "4", and the least positive was scored as a "1".

How many friends do you have in school?
A. I have a lot of friends in school.
B. I have quite a few friends in school.
C. I don't have very many friends in school.
D. I don't have any friends in school.

Figure 1. An example of an item from the Student Self-Report.

The Student Self-Report was developed in the Lansing School District by the Office of Evaluation Services to reflect the affective issues most often addressed by counselors. The initial set of items was developed after meetings in which counselors described the specific behavior and attitude changes produced by their services. A pilot instrument was developed and reviewed by the counselors. This instrument was designed to address three general affective areas, self-concept, classroom behavior and getting along with others.

The pilot instrument was administered to students during the 1978-79 school year; reliability coefficients and factor analyses were completed on these data. Measured by Cronbach's Alpha, the reliability coefficient for the entire scale was .88. The subscale reliabilities were .79 for self-concept, .80 for classroom behavior and .69 for getting along with others. The factor analyses showed that most of the self-concept items were in one cluster, and most of the classroom behavior items were in another cluster. The getting along with others scale, however, contained three types of items. Some items asked the student whether other students liked them. These items correlated very well with the self-concept scale. A second group of items did not correlate well with any of the scales, but fit better with the classroom behavior items. The only remaining items correlated with each other, and seemed to measure belligerence, that is, hitting, shoving and fighting.

Items which did not correlate well with any of the scales were removed from the instrument. Redundant items were also removed to shorten the instrument. The items on how well the student was liked were moved to the self-concept scale. Finally, new items were written to attempt to measure getting along with others. These attempted to measure whether the student likes other students, and whether he or she initiates positive social contacts with other students.

With these revisions the size of the final instrument was reduced from 46 to 35 items. Reliability and validity data are discussed in the Results section of this paper.

A second source of data for this study was weekly counselor logs. These logs listed the students seen by the counselors each week. The logs were used to determine the amount of counselor service received between the pre and post-test by each of the tested students.

Testing Procedures

Classroom testing was done by staff trained by the Office of Evaluation Services. The classroom teacher, however, remained in the room while testing was conducted. The tester introduced him or herself, explained the reasons we were conducting the testing, and explained that the tests were confidential, and that teachers, parents and counselors would not see the students' answers. After two practice questions, the tester read the test items to the students. The students also had their own copy of the test. Counselors tested the students who had not been included in the random sample. Unless these students had a reading problem, they read and completed the test on their own.

Results and Discussion

Content Analysis of the Student Self-Report

The Student Self-Report contains twenty three items from the pilot instrument, and twelve new items. It is organized into three subscales: self-concept, getting along with others and classroom behavior.

The self-concept subscale is composed entirely of items from the pilot instrument. In the analysis of that instrument, all of these items loaded on the same factor. These items can be subcategorized, however, into the following content areas:

Self-image: Items 2, 4, 5, 6 and 8
These items ask the students how well they like themselves, how many things they do well, how good looking are they, and how often it is their fault when things go wrong.

Liked by others: Items 1, 3, 7, 9, 10 and 11
These items probe whether the students perceive themselves as likeable people. They ask whether the student is easy to get along with, whether the students believe other people when they tell them they like them, whether the student get blamed for things that are not their fault; and whether the students feel they have friends and that other students like them.

The getting along with others subscale was largely rewritten after the analysis of the pilot instrument. This analysis showed that the only items from the original subscale which loaded on the same factor were items measuring antisocial behaviors - hitting, shoving, fighting, etc. The new subscale contains three items from the pilot instrument and eleven new items. These items can be subdivided into the following content clusters:

Belligerence: Items 12, 14, 20 and 22
These items ask the student how often they fight, whether it is ok to wreck other people's stuff, whether they tease other children and whether they get angry when the teacher points out a mistake.

Liking others: Items 13, 16, 17, 18 and 23
These items measure whether the students like other students in school, whether they feel the other students are nice people, whether they have a good friend in class, and whether they would want to work with a group of other students from the class.

Positive Social Skills: Items 15, 19 and 21
These items measure social skills which help students make and keep friends: talking over problems with friends, sharing and joining other students in games.

Empathy: Items 24 and 25
These items measure the extent to which the students try to help another student who is having problems: spending time with a student others dislike, asking a crying student what's wrong.

All but one of the classroom behavior items had been on the pilot instrument and in the factor analysis of that instrument these items all loaded on the same factor. The items all address non-compliance issues in the classroom; however, the content of the items suggest the following subclusters.

Disobedience: Items 26, 27, 29, 33 and 34
These items measure whether the students do what they are told to do, take care of their books and materials, behave when the teacher is out of the room, never refuse to talk to the teacher and pay attention in class.

Talking: Items 28, 31 and 32
These items measure whether the students talk when they are not supposed to, bother other students when they are trying to work, and are out of their seats when they are not supposed to be.

Lack of Concern for Work: Items 30 and 35
These items asked the students whether they complete their work, and whether they continue to work when the teacher isn't watching.

The preceding content clusters give an overview of the traits the subscales were designed to measure. Self-concept was defined as both self image and an image of oneself as a person whom others like. Getting along with others was defined as a lack of belligerence, the presence of some pro-social skills, a general attitude of regard and liking of others and empathy for the problems of others. Finally, the classroom behavior subscale measured compliance issues - disobedience, talking out of turn and lack of concern for work. Clearly there is some overlap in the content of some of the clusters assigned to different subscales. Some of the items from the "liked by others" cluster seem to measure the same kinds of traits measured by the "liking others" subscale. The antisocial behavior items from the getting along with others subscale address issues which are also behavior problems in the classroom. Thus, these items might as easily have been placed in the classroom behavior subscale.

The three subscales, however, are not necessarily intended to be orthogonal. The counselors indicated that these were the general areas most often addressed in individual counseling sessions, and therefore, we attempted to provide separate data for these three areas. We hoped that the discrimination between the three subscale scores would be sufficient to provide a more precise measure than that provided by the total scale score. Nevertheless, we expected that the three scales would be highly related.

Scale Reliability

The primary question addressed by this research was whether the Student Self-Report could be used as a reliable measure of self-concept, classroom behavior, and getting along with others. Therefore, two estamates of reliability were computed for the Student Self-Report and its subscales. These data are shown in Table 1. Cronbach's Alpha was used as a measure of internal consistency, and Pearson Product-Moment correlations were computed between the pre and post-tests to provide a measure of test-retest reliability. Although the revised instrument contained fewer items, these data show that the reliability for the Student Self-Report remained consistent with that of the pilot instrument. The reliability of the getting along with others subscale, however, remained lower than that of the other subscales, suggesting that the revisions to this scale did not produce a unidimensional measure.

TABLE 1
Reliability Estimates for the Student Self-Report and its Subscales

SCALE	# OF ITEMS	MEAN	SD	INTERNAL CONSISTENCY (CRONBACH'S ALPHA) PRE	INTERNAL CONSISTENCY (CRONBACH'S ALPHA) POST	TEST-RETEST (PEARSON'S r) PRE VS. POST
Self-Concept	11	3.11	.42	.73	.77	.57
Getting Along With Others	14	3.24	.36	.64	.70	.49
Classroom Behavior	10	3.44	.43	.78	.84	.59
Total Scale	36	3.26	.30	.83	.85	.64

The data in Table 2 show item statistics for the individual items of the Student Self-Report . Three sets of statistics are included: item means and standard deviations; correlations between the item score and the total scores on the test and subtest (the correlations were corrected for the inclusion of the item score); and the factor loadings

TABLE 2
Item Statistics and Factor Loadings of Items From the Student Self-Report Pre-Test

ITEM	MEAN	SD	CORRECTED ITEM - TEST CORRELATIONS		FACTOR LOADINGS		
			TOTAL-TEST	SUB-SCALE	I	II	III
1	3.23	.77	.44	.33	.29	.35	.15
2	3.31	.74	.32	.36	.08	.37*	.13
3	3.07	.83	.30	.27	.23*	.21	.07
4	3.33	.69	.24	.30	.08	.39*	-.08
5	2.99	.85	.26	.47	.03	.52*	-.15
6	2.82	.81	.33	.47	.11	.54*	-.12
7	2.60	1.06	.31	.24	.24*	.19	.12
8	3.22	.74	.28	.25	.29*	.26	-.13
9	3.16	.74	.38	.50	.03	.63*	.05
10	3.46	.72	.37	.49	.02	.66*	.03
11	3.00	.86	.36	.51	-.02	.64*	.09
AVERAGE SELF-CONCEPT ITEM	3.11	.80	.33	.38	.13	.43	.01
12	3.14	.89	.24	.17	.35*	-.02	.12
13	3.29	.65	.28	.25	.03	.35*	.17
14	3.10	.99	.37	.31	.48*	-.01	.21
15	2.91	.79	.14	.20	.08	.15	.29*
16	3.26	.69	.53	.38	.23	.56*	.19
17	3.26	.75	.45	.37	.24	.36*	.24
18	3.76	.59	.32	.23	.03	.44*	.15
19	2.54	1.02	.28	.33	.14	.11	.35*
20	3.38	.66	.28	.31	.27	-.05	.36*
21	2.89	.88	.24	.31	.03	.17	.37*
22	3.71	.64	.25	.25	.34*	.14	.31
23	3.09	.98	.18	.18	-.11	.34*	.21
24	3.56	.64	.21	.26	.10	.06	.33*
25	3.16	.83	.17	.27	.13	-.09	.44*
AVERAGE GETTING ALONG WITH OTHERS ITEM	3.24	.79	.28	.27	.17	.18	.27
26	3.69	.58	.41	.55	.57*	-.01	.19
27	3.41	.78	.44	.54	.58*	.01	.22
28	3.30	.77	.34	.45	.57*	.00	-.01
29	3.74	.55	.38	.37	.32	.07	.41*
30	3.47	.67	.34	.32	.33*	.19	.08
31	3.39	.79	.44	.57	.66*	.06	.02
32	3.10	.91	.45	.57	.68*	.08	-.02
33	3.36	.91	.22	.24	.29*	.05	.05
34	3.38	.75	.43	.47	.48*	.18	.09
35	3.61	.60	.44	.54	.57*	.16	.01
AVERAGE CLASSROOM BEHAVIOR ITEM	3.44	.73	.39	.46	.51	.08	.10
AVERAGE TOTAL SCALE ITEM	3.26	.77	.33	.36	.14	.23	.14

*Primary factor loading

of the items in a principal component factor analysis with iteration and varimax rotation. The number of factors in this analysis was limited to three since only three factors had Eigen-values greater than one (1) after rotation.

These data suggest several conclusions. First, the items from the classroom behvior subscale clearly define a variable which can add to the information provided by the total scale score. All but one of these items loaded on factor 1, with an average loading of .51. Furthermore, the average correlation between the subscale score and the individual item scores was .46 as compared to a correlation of .39 between the iten scores and the total score. The difference between these correlations was significant at the .05 level, $\underline{t}$ dep (9) = 3.36, $\underline{p} < .05$.

The self-concept scale is less well defined, but still provides additional information compared to the total score. Eight of the eleven items from this scale loaded on factor 2, with an average loading of .43. The average correlation between the subscale score and the individual item score was .38 as compared with an average correlation of .33 between the item scores and the total score. This difference approached, but did not reach one tailed significance at the .05 level $\underline{t}$ dep (10) = 1.75, $.10 < \underline{p} < .05$.

The items from the getting along with others scale did not form a unitary factor. Five of the fourteen items showed a primary loading on Factor 2 with the majority of the self-concept items. These items asked students about how well they liked other students in the school. Three of the items loaded on Factor 1 with the classroom behavior items; these items stressed belligerence - hitting, shoving, fighting, etc. The remaining items loaded on Factor 3 and measured positive social contacts - sharing, taking care of other students, etc.

Thus, the getting along with others scale does not provide additional information beyond the information provided by the total score. In fact, the average correlation between the individual items and the subscale is lower than the correlation between the items and the total score. There does seem to be a cluster of items in this scale, however, which can be separated from the other items in the instrument; these items measure "pro social" behavior.

In general, the Student Self-Report provides an affective measure with sufficient reliability to be used to evaluate affective progrms. In addition, two of its subscales, the self-concept and classroom behavior scales provide reliable, more specific affective data. The third scale, getting along with others is less reliable, and does not seem to provide information which differs systematically from the total test score.

Fine Grain Cluster Analysis

The factor analysis in the preceding section revealed problems with the content analysis. No single general factor was found for the getting along with others subscale, yet the analysis did not separate

items of clearly different content in other subscales, i.e., the self-image and liking others subclusters of items.

Therefore, the items were clarified according to content, based on a series of exploration factor analysis, and this new content analysis was used to start a series of confirmatory factor analyses. This process was continued until a final analysis emerged in which the content analysis and factor analysis were in perfect agreement.

In the final analysis, 27 items were categorized in nine meaningful clusters, while eight items were placed in a residual category. The residual category items seemed to measure different traits for different students. For example, item 12 asks the student whether or not he/she gets angry when the teacher points out a mistake. This was originally categorized in the belligerence subcluster. The data analysis showed that some students reacted as predicted (on the basis of whether or not they get mad at the teacher); however many other students seemed to react on the basis of whether they get mad at themselves if they made a mistake. Most items in the residual set are of this sort. The items were open to several interpretations or measured several variables. None of these items correlated very well with each other or any of the clusters in the analysis.

Table 3 shows the correlations between the nine content areas for the 595 complete pre-tests. The correlations were computed using confirmatory factor analysis with communalities, and are corrected for attenuation.

Table 3. Correlations between the fine grained clusters (N = 595 pre-tests, correlations corrected for attenuation, decimals omitted)

	SS	B	T	D	W	P	F	A	SL
Social Skills	100	57	27	48	34	46	24	5	8
Belligerence	57	100	62	71	43	36	0	-7	-4
Talking	27	62	100	69	64	38	16	18	11
Disobedient	48	71	69	100	75	49	16	7	26
Lack of concern for work	34	43	64	75	100	49	38	28	51
Personability	46	36	38	49	49	100	60	38	70
Friends	24	0	16	16	39	69	100	65	70
Appearance	5	-7	18	7	28	38	65	100	78
Self-Liking	8	-4	11	26	51	70	70	78	100

The preceding cluster analysis serves to validate the content analysis of the instrument. There are several concerns, however, with using these clusters for measurement. Several of the clusters are very highly correlated and have essential identical (i.e., within sampling error) correlations with all other variables. Therefore, these clusters can be combined to form more reliable clusters without losing essential information. Moreover, no unique path diagram can be

fitted to the clusters individually (Hunter and Gerbing, in press).

Five of the fine grained clusters were combined using these criteria into two second order clusters. Talking, disobedient and lack of concern for work were combined into a Non Compliance cluster. The appearance and self-liking clusters were combined into a Self-Image cluster. While the personability and friends clusters were highly correlated, they did not have parallel correlations with the other clusters, and therefore could not be combined.

At the end of the fine grain cluster analysis, 27 items were included in six meaningful global clusters. These clusters included:

Social Skills: Items 24, 21, 25 and 19
This cluster included most of the items from the positive social skills and empathy content clusters: i.e., sharing, talking over problems with friends, spending time with a student others dislike, asking a crying student what's wrong.

Belligerence: Items 20, 22 and 14
This cluster included most of the belligerence items from the content analysis: i.e., wrecking other people's stuff, teasing other children, fighting.

Non-Compliance: Items 26, 27, 28, 29, 30, 31, 32, 34 and 35
This cluster included all but one of the items from the classroom behavior subscale of the instrument.

Personability: Items 1, 16 and 17
These items came from the liking others and liked by others content analysis clusters. The questions seem to measure a positive attitude towards making friends, i.e., does the student see him or herself as hard to get along with and others as generally nice.

Friends: Items 10, 9, 11 and 18
These items measure whether the student feels liked by others, and includes most of the remaining items from the liking others and liked by others content clusters.

Self-Image: Items 2, 4, 5 and 6
This cluster included most of the items from the self-image content cluster. They measure how well the students like themselves, how many things they do well and how good looking they feel they are.

Descriptive statistics for the six global clusters are shown in Table 4 for the pre-test, post-test and change scores. The means and standard deviations were calculated for average response rather than summed response to preserve the original response scale of 1 to 4. Two measures of reliability are shown, Cronbach's Alpha was used to measure internal consistency, and Pearson Product - Moment correlations were computed between the pre and post-test to estimate test-retest reliability.

Table 4. Descriptive statistics for the six global clusters on the pre and post-test (N = 448).

CLUSTER	# OF ITEMS	PRE-TEST			POST-TEST			CHANGE			TEST-RETEST PRE VS. POST
		X	SD	ALPHA	X	SD	ALPHA	X	SD	ALPHA	
Social Skills	4	3.04	.52	.49	2.94	.59	.60	-.10	.61	.26	.40
Belligerence	3	3.49	.55	.57	3.43	.59	.63	-.07	.55	.12	.55
Non-Compliance	9	3.45	.45	.79	3.25	.54	.85	-.19	.45	.58	.59
Personability	3	3.25	.56	.62	3.22	.50	.52	-.03	.56	.23	.45
Friends	4	3.32	.54	.73	3.35	.53	.72	.01	.54	.45	.50
Self-Image	4	3.12	.52	.61	3.12	.51	.59	.01	.50	.17	.52

These data suggest that a set of content clusters have been identified which can provide more information than is provided by the more general subscales. These clusters have relatively good internal consistency reliability. In addition, the pattern or correlations between the clusters (shown in Table 5 of the next section) suggests that these clusters measure six different underlying variables since none of these clusters are parallel in their correlations with the other clusters in the instrument.

Causal Analysis

Table 5 presents the raw score correlations between the clusters on the pre-tests, post-tests and the cluster change scores. These correlations are strongly affected by error of measurement and are thus meaningful only in terms of crude patterns. However, a consistent pattern can be observed within the cluster correlation matrices for the pre-test and post-test. That is, the highest correlations are found between adjacent clusters in the matrix, and the correlations decrease with increased distance between clusters in the matrix. The ability to develop a matrix with these properties suggests a rather simple causal hierarchy between the variables measured these clusters. In this model, shown in Figure 2, the relation between two non-adjacent clusters is mediated by variables which fall between them in the matrix.

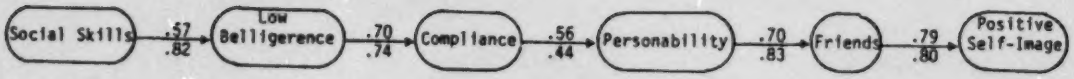

Figure 2. A causal model which fits the relationship between the clusters of items on the Student Self-Report. The correlations above the line taken were from pre-test data, those below the line were taken from post-test data. The correlations were corrected for attenuation.

Table 5. Raw score correlations between pre-test, post-test and change scores (N = 448, test retest correlations underlined, decimals omitted.

		PRE-TEST						POST-TEST						CHANGE					
		SS 100	BEL 30	COM 27	PER 26	FRI 14	SI 7	SS 40	BEL 30	COM 21	PER 14	FRI 10	SI -4	SS -46	BEL 1	COM -3	PER -13	FRI -4	SI -11
PRETEST	Social Skills							100	39	34	29	13	5	63	15	17	16	11	4
	Low Belligerence	30	100	47	22	-2	-3	27	55	44	22	1	-4	0	-42	5	-3	2	-1
	Compliance	27	47	100	39	14	18	22	41	59	28	15	17	-2	-3	-29	-14	1	-2
	Personability	26	22	39	100	47	33	10	16	32	45	27	21	-12	-5	0	-60	-20	-13
	Friends	14	-2	14	47	100	53	2	-1	5	32	50	41	-10	0	-7	-19	-51	-13
	Self-Image	7	-3	18	33	53	100	1	-3	11	21	34	52	-5	0	-4	-14	-19	-51
POSTTEST	Social Skills	40	27	22	10	2	1												
	Low Belligerence	30	55	41	16	-1	-3	39	100	54	27	-2	-3	12	53	23	8	0	0
	Compliance	21	44	59	32	5	11	34	54	100	29	13	14	15	15	60	-7	8	2
	Personability	14	22	28	45	32	21	29	27	29	100	51	30	16	7	6	45	19	9
	Friends	10	1	15	27	50	34	13	-2	13	51	100	52	4	-3	1	18	50	17
	Self-Image	-4	-4	17	21	41	52	5	-3	14	30	52	100	8	1	0	6	10	48
CHANGE	Social Skills	-46	0	-2	-12	-10	-5	63	12	15	16	4	8	100	13	20	26	14	14
	Low Belligerence	1	-42	-3	-5	0	0	15	53	15	7	-3	1	13	100	21	11	-3	1
	Compliance	-3	5	-29	0	-7	-4	18	23	60	6	1	0	20	21	100	6	9	4
	Personability	-13	-3	-14	-60	-19	-14	16	8	-7	45	18	6	26	11	6	100	37	21
	Friends	-4	2	1	-20	-51	-19	11	9	8	19	50	10	14	-3	9	37	100	30
	Self-Image	-11	-1	-2	-13	-13	-51	4	0	2	9	17	48	14	1	4	21	30	100

The model in Figure 2 would suggest, for example that increases in social skills would affect compliance only to the extent that it reduced belligerence. Furthermore, the correlation between social skills and non-compliance should approximately equal the product of the correlations between social skills and belligerence and between belligerence and compliance.

This prediction is the basis for the first test of the model, shown in Table 6 for the pre-test and Table 7 for the post-test. These tables show the actual correlations between the clusters in the first matrix. The correlations between the clusters were then predicted using the model and entered into the second matrix. For example, the entry for the predicted correlation between social skills and compliance was computed by multiplying the intervening correlations in Figure 2 (.57 and .70). The third matrix in these tables shows the deviation between the predicted correlations and the actual correlations. None of these deviations, for either the pre or the post-test, exceed the error expected from sampling error. Thus, no model can be developed with these clusters to further explain the correlations between the clusters.

Table 6. The error analysis of the static path model for the pre-test data using the model shown in Figure 2. (Correlations corrected for attenuation, decimals omitted.)

Matrix 1. The pre-test correlations corrected for attenuation.

	SS	BEL	COM	PER	FRI	SI
Social Skills	100	57	43	47	23	13
Low Belligerence		100	70	37	-3	-5
Compliance			100	56	18	26
Personability				100	70	54
Friends					100	79
High Self-Image						100

Matrix 2. The reproduced correlations predicted by the model in Figure 2.

	SS	BEL	COM	PER	FRI	SI
Social Skills	100	57	40	22	16	12
Low Belligerence		100	70	39	27	22
Compliance			100	56	39	27
Personability				100	70	55
Friends					100	79
High Self-Image						100

Matrix 3. Errors in fit (acutal minus reproduced correlations).

	SS	BEL	COM	PER	FRI	SI
Social Skills	---	0*	3	25	7	1
Low Belligerence		---	0*	-2	-30	-27
Compliance			---	0*	-21	-1
Personability				---	0*	-1
Friends					---	0*
High Self-Image						---

*These errors are 0 since these correlations were used to predict the other cells in the matrix.

Table 7. The error analysis of the static path model for the post-test data using the model shown in figure 2. (Correlations corrected for attenuation, decimals omitted.)

Matrix 1. The post-test correlations corrected for attenuation.

	SS	BEL	COM	PER	FRI	SI
Social Skills	100	82	48	52	20	8
Low Belligerence		100	74	47	-3	-5
Compliance			100	44	17	20
Personability				100	83	54
Friends					100	80
High Self-Image						100

Matrix 2. The reproduced correlations predicted by the path model in Figure 1b.

	SS	BEL	COM	PER	FRI	SI
Social Skills	100	82	61	27	22	19
Low Belligerence		100	74	33	27	22
Compliance			100	44	37	29
Personability				100	83	66
Friends					100	80
High Self-Image						100

Matrix 3. The errors (actual minus reproduced correlations)

	SS	BEL	COM	PER	FRI	SI
Social Skills	---	0*	-13	25	-2	-10
Low Belligerence		---	0*	14	-30	-27
Compliance			---	0*	-20	-9
Personability				---	0*	14
Friends					---	0*
High Self-Image						---

*These errors are 0 since these correlations were use to predict the other cells in the matrix.

The second test of this model evaluates the directionality of the effects predicted by the model. This model predicts, for example, that changes in social skills should affect belligerence, but that changes in belligerence should not affect social skills. This suggests that the correlation between social skills on the pre-test and belligerence on the post-test should be higher than the correlation between belligerence on the pre-test and social skills on the post-test.

Table 8 presents the cross lag correlations between the pre-test and post-test clusters. Since the clusters have been arranged in the hyothesized causal order, the correlations above the diagonal represent the relationship between the pre-test score of each cluster and the post-test score of all clusters higher in the causal hierarchy. The reverse is true for the correlations below the diagonal. If the clusters have been correctly arranged, the correlation above the diagonal for a pair of clusters should be larger than the corresponding correlation below the diagonal. In 10 of the 15 comparisons, the predicted correlation was larger, in one comparison the correlations were equal, and in the remaining four comparisons the correlation below the diagonal was larger. The mean of the correlations above the diagonal was .299 while the mean of the correlations below the diagonal was .255. This difference was significant at the .05 level using one tailed dependent t-test, $t_{dep(14)} = 2.06$, $p<.05$.

Table 8. The cross lag correlations between pre-test and post-test measures (corrected for attenuation, decimals omitted, test retest correlations underlined).

		POST-TEST					
		SS	BEL	COM	PER	FRI	SI
P	Social Skills	74	54	33	28	17	-7
R	Low Belligerence	46	92	63	40	2	-7
E	Compliance	32	58	72	44	20	25
T	Personability	16	26	44	79	40	35
E	Friends	3	-1	6	52	69	62
S	High Self-Image	2	-5	15	37	51	87
T							

Implications of the Causal Analysis

The path diagram in Figure 2 has implications for therapy in that it predicts indirect effects. For example, if the counselor wants to improve a child's self concept, then the path diagram suggests that one strategy would be to help the child make friends. On the other hand, if the counselor tries to help a child learn social skills, then there will be a considerable lag before such a change works its way down the causal chain to self concept. Furthermore, there may be considerable attenuation in the impact by the time it moves through so many intermediate stages.

The path diagram also suggests that therapy may frequently prove ineffective; especially if directed at the last steps in the chain. For example, suppose that a child has a low self concept because he/she is inconsiderate and hence unliked. If the counselor arranges for the child to form several new friends, then the path diagram predicts that there will be a concommitant improvement in self concept. However, the path diagram also predicts that there will continue to be changes after the counselor has quit. The same causal processes which caused the child to be unliked will continue to operate after therapy and are likely to result in a breech in the child's relations with his new friends and a consequent return to his original low level of self concept.

According to the path diagram, the place to elicit lasting change is to improve the child's social skills. An increase in these skills will lead to a decrease in belligerence which will lead to an increase in compliance which will make the child more likeable which will lead to more friends and finally a higher self concept. Of course, the fact that the model does not contain causal antecedents of these social skills does not mean that there are none. It just means that they were not tapped by this questionnaire.

Evaluating the Impact of Counseling Services

Each of the nine schools participating in this study received the full-time services of an elementary school counselor. The counselors maintained logs which listed the students who were seen each week in individual or small group sessions. These logs were used to determine the amount of counseling service received by each of the students who were pre and post-tested with the Student Self-Report.

As described in the methods section of this report, students were tested in one of two ways. Classrooms were randomly selected in each of the nine schools; students in these classrooms were pre and post-tested. In addition, at the time of the pre-test counselors identified students whom they expected to see regularly. These students were pre and post-tested by the counselor if they had not been included in one of the randomly selected classrooms.

An examination of the amount of counseling services received by the randomly selected students showed that three district kinds of service patterns could be identified. A majority of the students (70.3%)

received no individual or small group services. A second group of students, 14.3% of the population, received these services, but only had one to five sessions. These sessions tended to focus on acute behavioral problems in the school - fighting, problems in the lunchroom, a one-time problem in the classroom, etc.

The remaining students had fairly regular meetings with the counselor over a period of two to nine months. While these students represent a relatively small percentage of the school population (15.4%), they represent a major focus of the conselor's program. We estimated from the counselor logs that about 45% of the counselors time is spent with these students (Young, 1980). This was the reason we included the counselor tested students in the evaluation - we needed a substantial sample of these "high priority" students who received regular counseling services.

Table 9 shows Pearson Product-Moment Correlation between the number of counseling sessions the students received and average pre-test, post-test and gain scores on the Student Self-Report and its subscales. Table 10 shows the relationship between the number of sessions and the fine grain clusters in the instrument. The correlations in Table 10 were computed using a confirmatory factor analysis and have been adjusted for attenuation due to error in the measures.

Negative correlations were found between the number of sessions and each of the three pre-test subscales. These correlations were highest for the classroom behavior and self concept scale. The fine grain clusters most highly correlated with the amount of service were compliance, personability and friends. These data suggest that students are most often referred for behavioral issues and negative relationships with other children. These data are in agreement with counselor log data which showed that the majority of the high priority target students were referred for behavior problems.

Table 9 shows that the only significant positive correlation between the amount of services and change on the instrument was found for the classroom behavior subscale. Table 10 shows that this service had the most impact in the fine grain clusters of compliance and personability.

TABLE 9

Pearson Product-Moment Correlations
Between Number of Counseling Sessions
and Pre-Test, Post-Test and Gain Score
for the Student Self-Report

	PRE-TEST	POST-TEST	GAIN
Self-Concept	-.20 p=.00	-.23 p=.00	-.03 p=.26
Getting Along With Others	-.08 p=.03	-.07 p=.06	.01 p=.42
Classroom Behavior	-.22 p=.00	-.11 p=.01	.09 p=.03
Total Scale	-.21 p=.00	-.17 p=.00	.02 p=.30

TABLE 10

Relationship between Number of Counseling Sessions
and Pre-Test, Post-Test and Gain Scores
for the Fine Grain Clusters
of the Student Self-Report
(Correlations Corrected for Attenuation)

	PRE-TEST	POST-TEST	GAIN
Social Skills	.01	.03	.02
Belligerence	-.17	-.15	.00
Compliance	-.28	-.11	.19
Personability	-.33	-.22	.23
Friends	-.23	-.24	.01
Self-Image	-.10	-.18	-.12

Table 11 compares pre-test, post-test and gain scores for "high priority" students, those students who received at least five counseling sessions, and comparison students, students who received no counseling service. These data show that significant differences were found between high priority and comparison students on all three of the pre-test measures; that is, high priority student scores indicated higher affective needs.

No significant differences were found, however, between gain scores for high priority and comparison students on any of the measures.

The data in Tables 9, 10 and 11 raise a concern about measuring program effects. These data suggest that the primary impact of counseling service was in the area of compliance and classroom behavior. Work with the pilot instrument, however, had shown significantly larger gains in self-concept for high priority target students. (Flood, Petersen, Young, 1979.) Since only half of the self-concept items were retained on the Student Self-Report, it was possible that we had eliminated the items which measured change on the pilot instrument. However, we reanalyzed the data for the 1978-79 program year using only the items retained on the Student Self Report. This subset of items showed more powerful program effects than the original set; the difference between mean gain scores was .11, $F(1,446) = 4.305$, $p<.05$.

TABLE 11

Pre-Test, Post-Test and Gain Scores
of High Priority and Comparison Students

Self-Concept (11 Items)

	High Priority	Comparison	ANOVA
Pre-Test	2.95	3.13	F(1,421) = 12.35, p = .00
Post-Test	2.93	3.16	F(1,421) = 21.55 p = .00
Gain	-.02	+.03	F(1,421) = 1.38, p = .24
N	99	324	

Getting Along With Others

	High Priority	Comparison	ANOVA
Pre-Test	3.21	3.23	F(1,421) = 0.32, p = .57
Post-Test	3.12	3.17	F(1,421) = 1.28 p =
Gain	-.09	-.06	F(1,421) = 0.40, p = .53
N	101	322	

Classroom Behavior

	High Priority	Comparison	ANOVA
Pre-Test	3.29	3.46	F(1,422) = 12.90, p = .00
Post-Test	3.11	3.28	F(1,422) = 8.24 p = .00
Gain	-.09	-.06	F(1,422) = 0.03, p = .87
N	101	323	

Total Test

	High Priority	Comparison	ANOVA
Pre-Test	3.15	3.27	F(1,416) = 10.49, p = .00
Post-Test	3.05	3.20	F(1,416) = 14.49, p = .00
Gain	-.10	-.07	F(1,416) = 0.94, p = .33
N	97	327	

These data suggest that the Student Self-Report shares a problem with other instruments we have used to measure affective change; it is somewhat insensitive to program effects. We are forced to conclude from the failure to replicate the findings of Flood, Petersen and Young (1979) that the improvement in self-concept measured in the first study was a data artifact rather than "real" program change. Given that other measures, i.e., teacher completed checklists, reflected consistent improvement for the high priority students, (Flood, Petersen, Young, 1979; Young, 1980) we feel that the failure to find change with this instrument is a problem with the instrument and not with the counseling program.

Summary And Conclusions

This paper has summarized data on the Student Self-Report. The report addresses the reliability of the instrument and its subscales. Content and factor analysis data have been provided supporting the content validity of the instrument. A causal hierarchy was developed for the instrument's content clusters. Finally, the instrument was used to measure program change.

The reliability data showed acceptably high internal consistency estimates of reliability for the total scale and two of the subscales, self-concept and classroom behavior. Test-retest reliability was somewhat lower, but was sufficiently high for use in evaluating program effects. An exploratory factor analysis of the instrument suggested that the self-concept and classroom behavior items defined two scales which could provide more specific affective information.

Confirmatory factor analysis procedures were used to examine the content analysis of the instrument. A reasonably good match was obtained between the content analysis and the fine grained clusters identified in the instrument. Eight problematic items were identified which did not fit in any of the content clusters.

The correlations between the fine grain clusters in the instrument were fit into a matrix in which the highest correlations were between adjacent clusters and correlations decreased with increased distance between clusters in the matrix. A hierarchical causal model for the development of self-concept was suggested by these data. Tests of this model were run. These tests agreed with the predictions of the model, within the measurement limits of the instruments.

Finally, the instrument was used to measure change produced by counseling intervention. These data showed that the instrument measured the kind of problems for which students are referred. However, only small program effects were identified. Since these effects were not consistent with the effects measured in the program the previous year, we concluded that the instrument shares one of the problems we have had with other affective evaluation instruments; it is not particularly sensitive to the impact of the program.

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APPENDIX A
INSTRUMENTS

STUDENT SELF-REPORT

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PRACTICE

1. Think about the color red. How often do you like to wear red clothes?

   A. I almost always like to wear red clothes.
   B. I usually like to wear red clothes.
   C. I usually don't like to wear red clothes.
   D. I almost never like to wear red clothes.

2. Imagine that you didn't have to go to school if you didn't want to. Do you think that you would go to school even if you didn't have to?

   A. Yes
   B. Probably
   C. Probably not
   D. No, no way

Name _____

School _____

THE FIRST GROUP OF QUESTIONS IS ABOUT YOU. REMEMBER, DON'T CIRCLE ANY ANSWERS UNTIL I HAVE READ THEM ALL TO YOU.

1. Are you easy or hard to get along with?

   A. I'm almost always easy to get along with.
   B. I'm usually easy to get along with.
   C. I'm usually hard to get along with.
   D. I'm almost always hard to get along with.

2. Sometimes we like ourselves a lot and sometimes we don't like ourselves very much at all. How do you feel about yourself most of the time?

   A. I almost always like myself
   B. Most of the time I like myself.
   C. Most of the time I don't like myself.
   D. I almost never like myself.

3. When people tell you that they like you, do you usually believe them or do you think they are just saying that?

   A. I almost always believe them.
   B. I usually believe them.
   C. I usually think they are just saying that.
   D. I almost always think they are just saying that.

4. Think about all the things that you do in school (school work, playing games, sports.....). How many things can you do well?

   A. I can do a lot of things well.
   B. I can do quite a few things well.
   C. I can't do very many things well.
   D. I can't do anything well.

5. How good-looking do you think you are?

   A. I think I'm very good-looking.
   B. I think I'm pretty good-looking.
   C. I don't think I'm very good-looking.
   D. I don't think I'm good-looking at all.

6. How good-looking do you think <u>other kids</u> think you are?

   A. Most of them think I'm very good-looking.
   B. Most of them think I'm pretty good-looking.
   C. Most of them think I'm not very good-looking.
   D. Most of them think I'm not good-looking at all.

7. How often do people blame you for things that really aren't your fault?

   A. People almost always blame me for things that aren't my fault.
   B. People usually blame me for things that aren't my fault.
   C. People usually don't blame me for things that aren't my fault.
   D. People almost never blame me for things that aren't my fault.

8. Think about the times when something bad happens or when things go wrong in school. How often is it your fault when things go wrong?

   A. It's almost always my fault when things go wrong.
   B. It's usually my fault when things go wrong.
   C. Sometimes it's my fault when things go wrong.
   D. It's almost never my fault when things go wrong.

9. Think about the students you know in your school. How many of the students that you know like you?

   A. Almost all of the students that I know like me.
   B. Most of the students that I know like me.
   C. Most of the students I know don't like me.
   D. Almost all of the students I know don't like me.

10. How many friends do you have in school?

   A. I have a lot of friends in school.
   B. I have quite a few friends in school.
   C. I don't have very many friends in school.
   D. I don't have any friends in school.

11. Think about the times when you want to do things with other kids. How easy is it for you to find kids to do things with?

   A. It's almost always easy for me to find kids to do things with.
   B. Most of the time it's easy for me to find kids to do things with.
   C. Most of the time it's hard for me to find kids to do things with.
   D. It's almost always hard for me to find kids to do things with.

THE NEXT FEW QUESTIONS ARE GOING TO ASK YOU ABOUT PEOPLE YOU KNOW IN SCHOOL. REMEMBER, YOUR TEACHERS AND FRIENDS WILL NEVER SEE YOUR ANSWERS, SO PLEASE BE AS HONEST AS YOU CAN. PLEASE WAIT TO CIRCLE YOUR ANSWER UNTIL I'VE READ THEM ALL TO YOU.

12. Think about the times in school when you haven't done your work as well as you could have and your teacher points out your mistakes. How often does it make you mad when your teacher tells you that you have made a mistake?

    A. It almost always makes me mad.
    B. It usually makes me mad.
    C. Sometimes it makes me mad.
    D. It almost never makes me mad.

13. Think about the students you know in this school. How many of them do you like?

    A. I like almost all of the students I know in this school.
    B. I like many of the students I know in this school.
    C. I don't like very many of the students I know in this school.
    D. I don't like any of the students I know in this school.

14. When other students get on your nerves, how often do you hit or shove them?

    A. I almost always hit or shove them.
    B. Most of the time I hit or shove them.
    C. Most of the time I don't hit or shove them.
    D. I almost never hit or shove them.

15. Pretend there is a bunch of kids in the playground you don't know very well - playing something that you <u>really</u> like to play (like jacks, basketball, tag, anything you really like). Would you ask to play with them?

    A. Yes, for sure
    B. Yes, probably
    C. No, probably not.
    D. No, no way.

16. How well do you get along with the other students in this class?

    A. I get along very well with the other students in this class.
    B. I get along pretty well with the other students in this class.
    C. I don't get along very well with the other students in this class.
    D. I don't get along with the other students in this class at all.

17. How many of the students in this class are nice people?

A. Almost all of them are nice.
B. Many of them are nice.
C. Not very many of them are nice.
D. None of them are nice.

18. Do you have a good friend in this class?

A. Yes, I have a really good friend in this class.
B. Yes, I have a kind of good friend in this class.
C. No, I don't really have a good friend in this class.
D. I have no good friend in this class at all.

19. When your best friend does something that makes you mad, how often do you talk it over with him or her to work it out?

A. I almost always talk it over.
B. I usually talk it over.
C. I usually don't talk it over.
D. I never talk it over.

20. Is it ever O.K. to wreck other people's stuff?

A. Yes, it really doesn't matter.
B. Yes, if they deserve it.
C. Maybe, if they really deserve it.
D. No, it's never O.K. to wreck other peoples stuff.

21. Pretend you have a special treat in your lunch. How often would you share it with one or two other students?

A. I would always share it.
B. I would usually share it.
C. I usually wouldn't share it.
D. I almost never would share it.

22. If you were on the playground at recess and you saw that one of the kids from your class was crying about something, how often would you tease or make fun of them?

A. I would almost always tease them.
B. I would usually tease them.
C. I would not usually tease them.
D. I would almost never tease them.

23. If your teacher assigns you a project and says you can work on it alone or in a group, how often would you decide to work in a group?

A. I would almost always decide to work in a group.
B. I would usually decide to work in a group.
C. I would usually decide not to work in a group.
D. I would almost never decide to work in a group.

24. What if you were on the playground at recess and you saw that one of the kids from your class was crying or really upset, would you ask them what's wrong?

A. I would almost always ask them what's wrong.
B. I would usually ask them what's wrong.
C. I wouldn't usually ask them what's wrong.
D. I would almost never ask them what's wrong.

25. What if there were a new student in your class whom nobody liked very much and that student wanted to play with you and your friends at recess. Would it be okay?

A. Yes, for sure.
B. Yes, probably.
C. No, probably not.
D. No, no way.

THE NEXT FEW QUESTIONS ARE GOING TO ASK YOU ABOUT THINGS YOU DO IN YOUR CLASSROOM. REMEMBER, YOUR TEACHERS WILL NEVER SEE YOUR ANSWERS, SO PLEASE BE AS HONEST AS YOU CAN BE.

26. How often do you do what your teacher tells you to do?

A. I almost always do what my teacher tells me to do.
B. I usually do what my teacher tells me to do.
C. I usually don't do what my teacher tells me to do.
D. I almost never do what my teacher tells me to do.

27. Think about the times when your teacher has to be out of the classroom for awhile. How do you act when your teacher is out of the room?

A. I almost always do what I'm supposed to do when my teacher is out of the room.
B. I usually do what I'm supposed to do when my teacher is out of the room.
C. I usually don't do what I'm supposed to do when my teacher is out of the room.
D. I almost never do what I'm supposed to do when my teacher is out of the room.

28. How often are you out of your seat when you're not supposed to be?

A. I am almost always out of my seat when I'm not supposed to be.
B. I am often out of my seat when I'm not supposed to be.
C. Sometimes I am out of my seat when I'm not supposed to be.
D. I am almost never out of my seat when I'm not supposed to be.

29. How do you treat your schoolbooks and other materials you use in the classroom?

A. I almost always take good care of them.
B. I usually take good care of them.
C. I usually don't take good care of them.
D. I almost never take good care of them.

30. When your teacher gives you school work to do, how often do you complete it?

A. I almost always finish my school work.
B. I usually finish my school work.
C. I usually don't finish my school work.
D. I almost never finish my school work.

31. Think about how you act in the classroom. How often do you bother other students when they are trying to work?

A. I almost always bother other students when they are trying to work.
B. I usually bother other students when they are trying to work.
C. I usually don't bother other students when they are trying to work.
D. I almost never bother other students when they are trying to work.

32. How often do you talk in class when you are not supposed to?

A. I almost always talk in class when I'm not supposed to.
B. I usually talk in class when I'm not supposed to.
C. I usually don't talk in class when I'm not supposed to.
D. I almost never talk in class when I'm not supposed to.

33. Do you ever refuse to talk to your teacher?

A. Yes, a lot of the time I refuse to talk to my teacher.
B. Yes, pretty often I refuse to talk to my teacher.
C. Yes, sometimes I refuse to talk to my teacher.
D. No, I never refuse to talk to my teacher.

34. How difficult or easy is it for you to pay attention in class?
A. It's almost always easy for me to pay attention in class.
B. It's usually easy for me to pay attention in class.
C. It's usually hard for me to pay attention in class.
D. It's almost always hard for me to pay attention in class.

35. Think about those times when the teacher gives you work to do by yourself. How often do you do the work even if the teacher isn't watching you?

A. I almost always do my work even if the teacher isn't watching me.
B. I usually do my work even if the teacher isn't watching me.
C. I usually don't do my work unless the teacher is watching me.
D. I almost never do my work unless the teacher is watching me.

RESEARCH INTO THE DEVELOPMENT OF AFFECTIVE INSTRUMENTS IN THE LANSING SCHOOL DISTRICT

Funded by the National Institute of Education
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FINAL REPORT
PART 2

The Development of an Instrument to Measure the Effects of Counseling Services on Elementary Children In Grades One and Two

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PREFACE

This is Part 2 of the final report of the NIE funded project, Research into the Development of Affective Instruments in the Lansing School District. This project, funded from February 15, 1980 - February 14, 1981, provided monies to investigate the development of two affective measures. The instrument described in this report was designed to measure the effects of counseling services on students in grades 3-6 and is described in part 1 of this report.

This project was managed by Robert Young, Office of Evaluation Services, Lansing School District. The administrator ultimately responsible for the project was Dr. Grace Iverson, Director of the Office of Evaluation Services. Ms. Ronda Hunter and Dr. John Hunter of Michigan State University were responsible for much of the research described in this report, however, the Office of Evaluation Services is ultimately responsible for its contents.

Persons wishing more information should contact the Office of Evaluation Services at (517) 374-4347.

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ABSTRACT

The primary level Student Self-Report is a 28 item affective, multiple choice questionnaire designed for use with first and second grade students. The instrument was developed to measure the kinds of behavioral and attitudinal changes counselors most often attempt to produce when they provide services.

The instrument was administered to 405 first and second grade students in six elementary schools. We found the instrument somewhat difficult for these students, and only 225 students completed all twenty eight items. For these 225 students, the instrument had a reliability of .70, estimated by Cronbach's Alpha.

A content analysis of the instrument identified eight content clusters: Social Skills, Belligerence, Compliance, Friends, Self-Concept, Looks, Smart and Mood. A confirmatory factor analysis showed that six of these clusters were generally internally and externally consistent; however, two of the clusters, Looks and Smart, were eliminated and put into a residual cluster. The cluster analysis was consistent with the clusters found in the instrument for upper elementary students.

The analysis also showed a disturbing pattern of response. The responses of at least ten percent of the 405 students were primarily determined by response bias (responding "always" or "never") rather than by item content. This pattern skewed the correlations between clusters of items so that positively scored items were more highly correlated than negatively scored items.

In general, the results suggested that the primary level instrument measures the same attitudes and behaviors measured by the upper level instrument. However, the instrument is rather difficult for students in the first and second grade, and invalid results are produced for a substantial number of these students.

THE DEVELOPMENT OF AN INSTRUMENT TO MEASURE THE EFFECTS OF COUNSELING SERVICES ON ELEMENTARY SCHOOL CHILDREN IN GRADES ONE AND TWO

The research described in this report reflects efforts by the Lansing Scool District, Office of Evaluation Services, to develop affective instruments suitable for measuring the effects of elementary counseling services on students in grades one and two. These research activities were begun because of difficulties we have encountered in measuring affective change. Prior to the development of the measure described in this paper, the Office of Evaluation Services had worked with several "counseling type" projects for which the objective data showed no change, while the staff directly involved with the project - counselors, teachers, parents and building administrators argued that the program had produced major changes in students that the instruments failed to measure.

In the winter of 1977, the Lansing School District received a special allocation of funds from the Michigan Legislature for providing counseling services to students in elementary school buildings. This grant included an evaluation component which required the identification or development of affective measures for evaluating the program. A review of available instruments, however, revealed no instruments which were both technically sound, and also measured the types of changes counselors expected to produce. For example, the Elementary School Test Evaluation (1970) published by the Center for the Study of Evaluation, rates tests on the basis of measurement validity, examinee appropriateness, administrative usability and normed technical exellence. One hundred and ten affective instruments are listed for the first, third and fifth grade. All but four of these tests were rated "poor" in the area of normed technical excellence, and all but thirteen were rated "poor" in the area of measurement validity.

Although several technically sound scales are available, i.e., Coopersmith's (1976) Self-Esteem Inventory and the Piers Harris Children's Self-Concept Scale, these scales tend to measure global, stable personality traits. Counselors, on the other hand, provide relatively short term intervention - we have found it to consist of five to twenty individual or small group sessions - and focus on rather specific problems which are interfering with the students' performance in school. We found that most of the counselors' time is spent in responding to classroom problems, i.e., fighting, non-compliance, and "attitude problems". Counselors also stressed that they work on self-concept and on helping students build relationships with their peers.

We were not convinced that the type of intervention provided by counselors is appropriately measured by general personality scales. Nevertheless, interviews with counselors suggested that observable, and therefore measurable, changes were reliably produced as a result of the counselors' activities. Therefore, a pilot student self-report instrument was developed to evaluate the project. Reliability and factor analysis data collected on this instrument showed the instrument

to be a stable and valid measure.

Since primary level children represent a major focus of the counselors' activities, we have attempted to develop a parallel instrument which could measure similar affective content for these children. This paper presents the reliability and validity data collected in developing a pilot version of this instrument.

METHODS

Subjects

The subjects for this study were 405 first and second grade students in six elementary schools in the Lansing School District.

Testing was done in the classroom. The classroom teachers were given a copy of the test for review, and then asked if they would permit us to test their students. Testing was done in every classroom in which we received the teacher's permission to test.

Instrument

The instrument for this study was the Primary level Student Self-Report. The instrument was developed in the Lansing School District to parallel an affective questionnaire developed for older students. This questionnaire had been designed to measure specific behaviors and attitudes addressed by counseling services. This instrument is a 28 question, multiple choice questionnaire. An example of a question from the instrument is shown in Figure 1 below. The entire instrument is included in Appendix A. Each item had three possible choices. The instrument was scored as a Likert Scale with the most positive response worth three points and the least positive response worth one point.

> How many of the kids in this class like you? Circle the A box if all of them like you, the S triangle if some of them like you, and the N circle if none of them like you.

Figure 1. An example of an item from the Student Self-Report.

Counselors were also interviewed to determine whether there were any additional affective issues which the instrument should measure. As a result, items measuring emotional state were added to the instrument. After a draft of the instrument was developed, all elementary counselors in the district were given a copy of the instrument to review. Suggestions resulting from this review were incorporated into the instrument.

Testing Procedures

Testing was done in the classroom by staff trained by the Office of Evaluation Services. The classroom teacher, however, remained in the room while the testing was conducted. The items were read to the students, and students responded on the form shown in Appendix A.

RESULTS AND DISCUSSIONS

Basic Item Statistics

Table 1 shows basic item statistics for the twenty-eight items of the Student Self-Report. These data include item means and standard deviations, the number of students who answered the question, and the correlations between the item scores and the total test score. The items were all scored so that a 1 represented the most negative response and a 3 represented the most positive response.

The data in Table 1 show a substantial amount of missing data, especially for the items at the beginning of the questionnaire. Most often, this occurred when students marked more than one response, suggesting that five or six practice questions should be developed for the questionnaire.

The average item score on the questionnaire was 2.23 with an average standard deviation of .72. The average correlation between the item scores and the total score was .32. Several of the items, however, notably items eight and twenty-three had substantially lower correlations. Cronbach's Alpha was computed as a measure of internal consistency for the 225 complete tests, alpha equaled .70.

TABLE 1

Basic Item Statistics
for the Primary Level Student Self-Report
(N = 405)

ITEM	MEAN	S.D.	N	CORRELATIONS
1	2.156	.561	339	.336
2	2.370	.696	359	.252
3	2.332	1.674	370	.354
4	2.245	.539	380	.332
5	2.377	.666	374	.381
6	2.289	.588	370	.375
7	2.070	.679	373	.250
8	1.935	.560	372	.060
9	2.453	.696	364	.303
10	2.109	.611	384	.419
11	2.059	.800	376	.217
12	2.032	.817	374	.359
13	2.337	.752	386	.270
14	2.551	.680	381	.361
15	2.563	.573	389	.423
16	2.497	.670	382	.325
17	2.736	.569	386	.340
18	2.326	.816	386	.218
19	2.049	.810	364	.346
20	1.969	.831	385	.152
21	2.600	.632	390	.352
22	2.474	.615	388	.440
23	1.917	.733	386	.114
24	2.490	.724	386	.414
25	2.134	.740	389	.132
26	2.404	.622	395	.492
27	2.281	.732	395	.453
28	2.198	.728	388	.375

Content Analysis

The 28 items which make up the present questionnaire are composed of two subsets: 22 items constructed from the previous questionnaire developed for older children and 6 mood items to assess anxiety or depression. The content analysis of the items show 8 clusters or subscales. The following clusters were defined.

Social Skills: Items 19, 20, 21 and 22
These items define positive social behavior - sharing, playing with a child your friends don't like, cheering up your friends, doing something special for your friends.

Belligerence: Items 13 and 14
These items define anti-social behavior - hitting others, teasing others.

Compliance: Items 15, 16, 17 and 18

These items defined acceptable classroom behavior - paying attention, not acting up, trying hard, behaving when the teacher leaves the room.

Friends: Items 4, 8 and 10

These items measure whether the student feel that others like him or her - do others like you, do others dislike you, would others want to sit next to you.

Self-Concept: Items 1 and 11

These items measure whether the student likes him or herself - how often do they feel they can do everything well, do they like themselves.

Looks: Items 3 and 9

These items were in the self-image cluster of the previous instrument and measure whether the child feels that he or she is attractive.

Smart: Items 2, 5, 6, 7 and 12

These items were primarily new, but were intended as part of the self-image cluster. They measure whether the child feels good about his ideas and ability to do good work in class - how often does the student feel dumb, proud of his or her work, do good work in class, feel like an important person in class, and feel that his or her ideas are liked by others.

Mood: Items 23, 24, 25, 26, 27 and 28

These items measure the emotional state of the child - how often the child feels frightened, lonely, scared, happy, excited, interested and that he or she is having fun.

Ten of the items were negatively worded; that is a response of "always" indicated a negative mood, attitude self-concept, etc. The remaining 18 items were positively worded. The negatively worded items were items 2, 8, 9, 11, 13, 14, 16, 18, 23 and 25.

Upon re-examination, several of the items also seemed to have ambiguous content. Item 20 asked the student whether he or she would play with a student his or her friends didn't like. We assumed that a positive response would indicate positive social behaviors and correlate with the social skills cluster. For students of this age, however, loyalty to ones friends may be more important. Item 23 asked the student if he or she is often lonely. We were unsure whether this would be a mood item or a friends item.

Exploratory factor analysis for the full sample

The exploratory factor analysis procedure used in this study was (1) Principal axis factor analysis saving factors with an eigenvalue greater than 1, (2) Varimax rotation, and (3) oblique multiple groups factor analysis using clusters defined by Wrigley's criterion (i.e.,

placing each item in the group corresponding to its highest factor loading).

Table 2: Exploratory factor analysis and item direction artifacts.

Table 2a. Factor loadings and item direction for the full set of 405 children using pair wide deletion of missing data. Contingency table relating item direction to the high factor loading.

		Item Direction	
High		+	-
Factor	I	17	0
Loading	II	1	10

Table 2b. Factor loadings and item direction for the 225 children who answered all questions. Contingency table relating the item direction to the high factor loading for the item.

		Item Direction	
High		+	-
Factor	I	16	0
Loading	II	2	10

The first correlation matrix analyzed was for the entire set of 405 children (with pair wide deletion of missing data). Two factors had eigenvalues greater than 1. The pattern of loadings was quite striking and quite disturbing. The negatively worded items all had their highest loading on Factor II, while with one exception the positively worded items all had their highest loading on Factor I. Moreover, the exceptional item was item 20 which was believed to be ambiguous on content grounds. The contingency table relating item direction to factor loading is shown in Table 2a.

As described earlier in this paper, there were many missing responses (66 missing out of 405 on item 1 for instance). Thus it was possible that the artifact of item direction might have arisen from some systematic pattern in leaving responses out. To check this, we computed the correlation matrix for those 225 children who answered every item. The results differed only slightly from those for the full set of 405 children. The contingency table showing the relation between item direction and factor loading is shown in Table 2b. Table 2b shows that all 10 negative items had their highest loading on Factor II, while 16 of 18 positive items had their highest loading on Factor I. Again, one of the exceptional items was the ambiguous item 20; the other was item 1. We concluded that the item direction artifact was

not due to patterning in the missing data. Indeed, inspection of the correlation matrix as a whole revealed only minor differences from that for the whole sample. Thus there were no systematic differences between children who completed all items and children who omitted some items.

Confirmatory factor analysis for the full sample

The correlation matrix for the full sample was reordered to group the items into the clusters generated by the content analysis. The correlation matrix is presented in Appendix B.

Six of the content clusters, social skills, belligerence, compliance, friends, self-concept and moods showed the expected strong cluster structure. Four bad items were identified. The ambiguous item 20 failed to correlate with anything aside from sampling error. The same was true for the ambiguous item 23, although it is not clear why it did not correlate with either of the possible clusters to which its content was related. Item 8 correlated negatively with the other friends. This may represent the item direction artifact in the data since item 8 was negatively worded and items 4 and 10 were positively worded. Item 25 correlated with no other item beyond sampling error. Again this may represent the item direction artifact since item 25 was the only negatively worded mood item (other than ambiguous item 23).

Two clusters, looks and smart showed very low internal correlations. The two looks items were correlated -.01 with each other. This may have been partially due to the item direction artifact; item 3 is "good-looking" while item 9 is "ugly". The items from the smart cluster were only slightly correlated with each other and were uncorrelated with any of the other clusters. There was no item direction artifact operating in this cluster, all the items from the smart cluster were positively worded.

The correlation matrix for the whole sample subjected to confirmatory factor analysis, i.e., oblique multiple groups factor analysis with communalities. The bad items 20, 8, 23 and 25 were dropped from their respective clusters and were added to a residual cluster along with the items from the looks and smart clusters. This confirmatory factor analysis is located in Appendix C. The confirmatory factor analysis showed that the six main clusters satisfied the confirmatory factor model to a considerable extent; the correlations were consistent within clusters and the items in each cluster tended to be parallel to each other. The primary deviations occurred within the compliance cluster where the positively and negatively worded items were not parallel.

Table 3 shows the correlations between factors from the confirmatory factor analysis. These correlations were positive, but substantially less than 1.00. Thus the clusters are clearly statistically distinguishable from one another. On the other hand, the effects of the item direction artifact are clearly visible in the table. Social

Table 3: The factor correlations between the main six clusters for the entire sample (decimals omitted, N = 405).

	SS	BEL	COM	FRI	SC	MOOD
Social Skills	100	37	38	67	21	63
Belligerence	37	100	60	6	29	21
Compliance	38	60	100	25	47	25
Friends	67	6	25	100	23	64
Self-Concept	21	29	47	23	100	19
Mood	63	21	25	64	19	100

skills, friends and mood are composed solely of positively worded items. These three factors have the three highest correlations between them. Belligerence is composed solely of negative items and its three correlations with social skills, friends and mood are much reduced from where they should be (by comparison with the correlations for older children found in our earlier research). Compliance and self-concept are each half positive and half negative in content.

Thus the correlations in the whole sample have a structure which is the composite of two structures superimposed on one another. One underlying pattern is the correlations between clusters as determined by item content. The other pattern is the item direction artifact; positive correlations between items in the same direction and negative correlations between items in opposite directions. One explanation for a composite structure is to assume that there are two kinds of children: those who understand the instructions and respond to the items, and those who misunderstand the instructions and respond to all items alike. If some of the children who misunderstand the instructions tend to always say "always" while some of them always say "never", then among the children who misunderstand there would be a tendency for all items to be perfectly correlated in their original form. However, after the negative items are reverse scored, the all positive correlations matrix would turn into one with the item direction artifact. Pooling the data across the two types of children produces a correlation matrix for the whole sample that is a composite of the correlation matrices for the two groups. This was our hypothesis to explain the results found in the exploratory and confirmatory factor analyses.

Identifying Response Biases

If all the children who misunderstood the instructions either answered all the items "always" or always answered "never", then the bad data would be easy to detect. However, it was likely that these children would not follow any pattern perfectly. Therefore, the following decision rule was developed.

We first listed the children who had answered over half of all items "always" or had answered over half of all items "never". This produced a list of 21 children. One child had answered every item "always" and another child had answered all but one item "never". All other cases were imperfect. However, in all cases, the children had either said

"always" to more than half of both the positive and to the negative items. Thus we felt no qualms about discarding these cases as bad data.

We then computed a new correlations matrix and carried out all analyses on it. The results were as we had predicted: the item direction artifact was reduced and the data looked much more like the data for the older children; however, a strong item direction artifact remained. The final decision rule is shown in figure 2.

Our specific criteria were: (1) The average score of both positive and negative items both were required to be greater than 2 when the total test average score was greater than 2.3, or (both averages were required to be less than 2 when the overall average was less than 1.7.

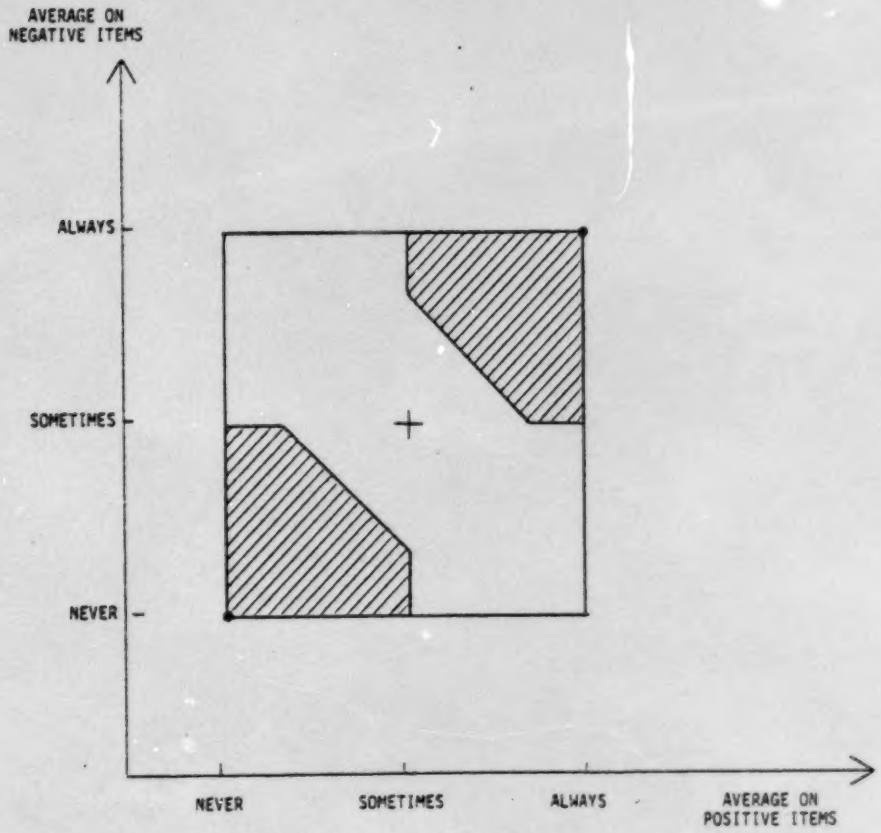

Figure 1. Graphic dislay of decision rule for bad data, shading indicates the region of probable bad data.

The central box in Figure 1 represents the set of all possible pairs of average responses across positively and negatively worded items. That

is, since items are scored 1, 2, or 3; the average must be between 1 and 3 for each set of items. The top right corner represents the perfect all "always" response set. The bottom left corner represents the perfect all "never" response set. The shaded areas represent the cases near these corners that were rejected by our decision rule.

By using this decision rule, we discarded 45 cases out of 405, yielding a discard rate of about 10 percent.

Exploratory Factor Analysis - Reduced Sample

In order to test the hypothesis that the factor structure shown in Table 2 was due to response bias rather than item content, we re-ran the analysis for the students selected by the decision rule described above. The pattern, shown in Table 4 is strikingly different: 3 out of 10 of the negative items loaded on Factor 1, while 7 of 18 of the positive items loaded on Factor II. There was still some correlation between item direction and factor loading, but then there is also a certain amount of correlation built into the content structure as well. We take the results in Table 4 to be a confirmation of our hypothesis that the item direction artifact in this data is due to a response bias for a portion of the younger children. This again suggests the need for a better instructional procedure prior to testing.

Table 4. Factor loadings and item direction for the 360 children left after 45 cases were dropped because they showed evidence of failure to understand the instructions. Contingency table relating the item direction to the high factor loading for that factor.

		Item Direction	
		+	-
High Factor Loading	I	11	3
	II	7	7

Confirmatory factor analysis of the reduced sample

After the 45 cases with suspect data were discarded we computed a new correlation matrix. The factor analytic results have been partially reported in Table 4; these data showed a drastic reduction in the item direction artifact. This section reports the results relevant to the confirmatory factor analysis.

A correlation matrix for the reduced sample was developed with the items grouped according to the 8 clusters of the content analysis. This matrix is included in Appendix D. This arrangement showed that the bad items of the whole sample are still bad items. Thus item 20 did not correlate with the other social skill items, and items 23 and 25 did not correlate with the other mood items. The correlation between looks items increased, but only to .06, and the correlations

between the "smart" items remained low as well, ranging from -.01 to .20. Therefore, the final recommendation for the cluster structure remained the same and a residual cluster was formed with the items from the smart and looks clusters and items 20, [illegible], 23, 25.

Table 5 shown an exploratory factor analysis of the reduced sample. Four principal components were defined without communalities. The table is arranged with the refined clusters grouped together down the side. Ideally, each item within a given cluster would have exactly the same pattern of factor loadings as each other item in that cluster. This was approximately true for the six main clusters with the bad items eliminated.

Table 5. Exploratory factor analysis of the reduced sample done with communalities (decimals omitted, N = 360, highest loading marked with an asterisk, items grouped by refined clusters).

		VARIMAX FACTORS			
	19	43*	-15	15	-15
Social Skills	21	29	-15	36*	18
	22	54*	-6	21	18
Belligerence	13	18	-13	50*	-42
	14	30	-12	49*	-15
	15	7	-66	2*	23
Compliance	17	21	45	1*	-3
	16	-81	66	2*	17
	18	4	1	19*	6
Friends	4	44*	-6	6	2
	10	45*	33	-3	5
Self-Concept	1	14	22	7	40*
	11	17	-3	11	46*
	24	37	41*	5	-28
Mood	26	51*	32	14	-11
	27	48*	22	16	-4
	28	50*	12	-7	17
	3	14	43*	12	3
	9	16	42*	-4	28
	2	3	48*	5	14
	5	2	30	34*	10
	6	15	30	35*	-6
Residual	7	32*	-2	-15	20
	12	31*	15	6	21
	20	4	3	-1	-57*
	25	9	23*	0	-6
	8	-14	41*	-9	-22
	23	-33*	32	26	5

A confirmatory factor analysis was completed on the refined clusters for the reduced sample. This analysis showed a good fit to the confirmatory model for all six of the main clusters. The matrix from

this analysis is included in Appendix E.

Table 6 shows the correlation between factors in the confirmatory factor analysis. The correlations were all substantially less than 1.00, showing that the factors were all well separated statistically. The distorting effects of item direction were reduced but still present; as is especially seen in the high correlations between social skills, friends and mood.

The analysis of the reduced sample tends to confirm the hypothesis that there was a substantial amount of bad data due to student misunderstanding of the instructions. However, it is also obvious that not all the bad data were found. Thus it is hard to know what credence can be given to the present findings in regard to the correlations between factors.

Table 6. The factor correlations for the refined clusters on the reduced sample (decimals omitted, N = 360).

	SS	BEL	COM	FRI	SC	MOOD
Social Skills	100	64	45	61	46	58
Belligerence	64	100	59	25	20	45
Compliance	45	59	100	30	45	35
Friends	61	25	30	100	38	62
Self-Concept	46	20	45	38	100	37
Mood	58	45	35	62	37	100

Recommendations for Instrument Improvement

The administration of the questionnaire requires more of an emphasis on teaching children how to take the test. First of all, there should be a pre-test using items intended to be "wasted". Ideally there would be a set of items with correct answers that could be checked to see if the child understands the instructions. Those children who do not could be individually tutored.

The items from the looks and smart clusters should be discarded (along with items 20, 8, 23 and 25). These 11 items could be replaced by others tapping the main clusters. Since item reliability is low, these clusters badly need to be increased in length.

If more items than 28 are needed, the test could be given over more than one day or in two sessions on one day. In fact for reliability purposes, and for increased power in item analysis, the same test could be given with a gap of a week or two. Item responses could then be averaged across sessions to generate "super-items", i.e., versions of the items with about twice the reliability.

The emphasis on positive items in the current questionnaire may be misplaced. If there is an asymmetry in response to items at either end of the scale, then it is the negative items which should be stressed since it is the negative end which to be assessed.

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APPENDIX A
THE PRIMARY LEVEL STUDENT SELF-REPORT

1. Sometimes we feel like we can do everything real well, like we are the best in everything. How often do you feel you can do everything well? Circle the A box for always, the S triangle for sometimes, the N circle for never.

2. Sometimes we feel really dumb, like we can't figure out anything. How often do you feel dumb? Circle the A box for always, the S triangle for sometimes and the N circle for never.

3. Sometimes we feel really good-looking. How often do you feel you really look good? Circle the A box if you feel you look good all the time, the S triangle if you feel you look good sometimes, and the N circle if you never feel you look good.

4. How many of the kids in this class like you? Circle the A box if all of them like you, the S triangle if some of them like you, the N circle if none of them like you.

5. How often are you proud of the work you do in school? Circle the A box if you're always proud of your work, the S triangle you're sometimes proud of your work, and the N circle if you are never proud of your work.

6. How often does your teacher feel you do good work in class? Circle the A box if (she/he) always feels you do good work, the S triangle if (she/he) sometimes feels you do good work, and the N circle if (she/he) never feels you do good work.

7. Sometimes our friends really like our ideas, How often do your friends like your ideas? Circle the A box if they always like your ideas, the S triangle if they sometimes like them and N circle if they never like them.

8. How many of the kids in this class don't like you? Circle the A box if all of them don't like you, the S triangle if some of them don't like you and the N circle if none of them don't like you.

9. Sometimes we feel kind of ugly - like no one would want to look at us. How often do you feel like that? Circle the A box if you always feel ugly, the S triangle if you sometimes feel ugly, and the N circle if you never feel ugly.

10. How many kids in this class would want to sit next to you. Circle the A box if all of them would, the S triangle if some of them would, and the N circle if none of them would.

11. Sometimes we don't like ourselves. How often do you feel that way? Circle the A box for all of the time, the S triangle for some of the time, and the N circle for none of the time.

12. Do you feel like you are an important person in your class? Circle the A box for always, the S triangle for sometimes, and the N circle for never.

13. When some kids get really angry at another kid, they hit them. How often do you hit people you get mad at? Circle the A box if you always hit them, the S triangle if you sometimes hit them, and the N circle if you never hit them.

14. When some kids don't like other kids in class, they tease them or call them names. How often do you tease the kids you don't like? Circle the A box if you always tease the kids you don't like, the S triangle if you sometimes tease the kids you don't like, and the N circle if you never tease the kids you don't like.

15. How often do you pay attention in class? Circle the A box if you always pay attention, the S triangle if you sometimes pay attention, and the N circle if you never pay attention.

16. How often do you act up in class? Circle the A box if you always act up in class, circle the S triangle if you sometimes act up in class, and circle the N circle if you never act up in class.

17. How often do you try hard when you do your school work? Circle the A box if you always try hard, the S triangle if you sometimes try hard, and the N circle if you never try hard.

18. Sometimes kids stop doing what they are supposed to do when the teacher leaves the room. How often do you do that? Circle the A box if you always stop doing what you're supposed to, the S triangle if you sometimes stop doing what you're supposed to, and the N circle if you never stop doing what you're supposed to.

19. When you get a special treat in your lunch, how often do you share it? Circle the A box if you always share it, the S triangle if you sometimes share it, and the N circle if you never share it.

20. Pretend that there was a kid in class that most of your friends didn't like. Would you let that kid play with you at recess? Circle the A box for always, the S triangle for sometimes, the N circle for never.

21. When you see that another kid in class is really sad about something, how often do you try to cheer them up? Circle the A box if you always try to cheer them up, the S triangle if you sometiems try to cheer them up, and the N circle if you never try to cheer them up.

22. How often do you do something special for your friends, just to make them feel good? Circle the A box if you do it a lot of the time, the S triangle if you do it some of the time, and the N circle if you never do it.

23. Sometimes we feel that there is nobody we can talk to. How often do you feel that way? Circle the A box if you always feel that way, the S triangle if you sometimes feel that way, and the N circle if if you never feel that way.

24. How often do you really have fun when you are in school? Circle the A box if you always have fun, the S triangle if you sometimes have fun, and the N circle if you never have fun.

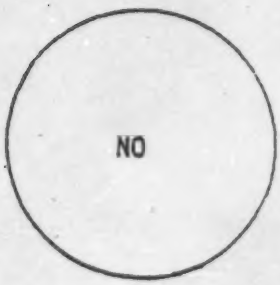
25. Sometimes people get scared that bad things will happen, scared that people won't like them, or that things will go wrong, or that they will get in trouble. How often are you scared that bad things will happen? Circle the A box if you are scared a lot of the time, the S triangle if you are scared some of the time, and the N circle if you are never scared bad things will happen.

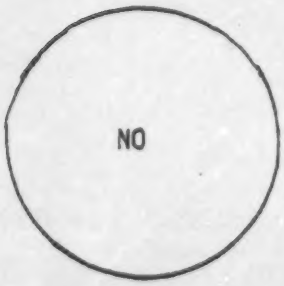
26. Sometimes we are happy and sometimes we are sad. How much of the time are you happy? Circle the A box if you're always happy, the S triangle if you're sometimes happy, and the N circle if you're never happy.

27. Sometimes, when really good things happen, we feel really, really great inside. We want to tell everyone about it, we feel excited. How often do you feel like that? Circle the A box if you feel that way a lot of the time, the S triangle if you feel that way some of the time, and the N circle if you never feel that way.

28. Sometimes we get so interested in something that we want to do it all the time. How often do you get that interested in the things you do? Circle the A box if you're interested a lot of the time, the S triangle if you're interested some of the time, and the N circle if you're never interested in what you're doing.

My name is _____





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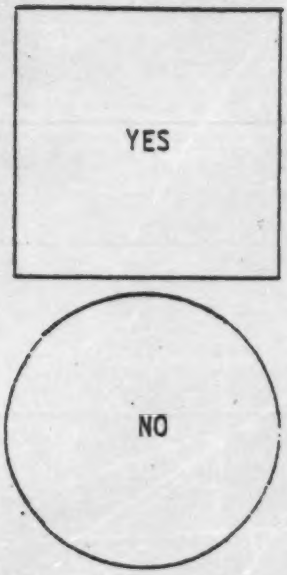

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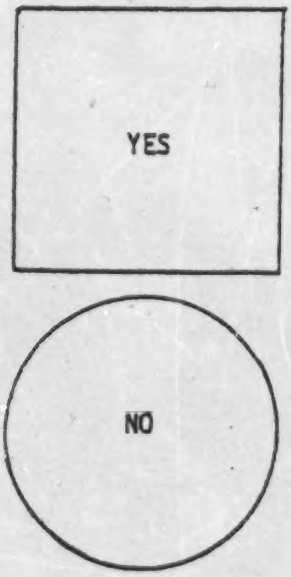

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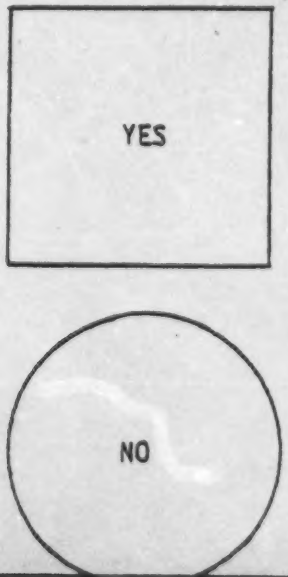
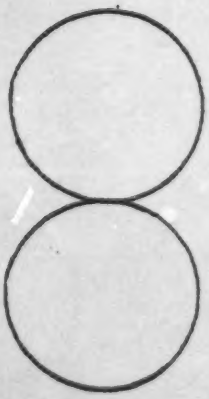


YES

NO

YES

NO



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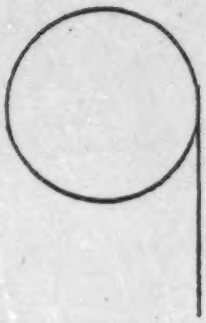

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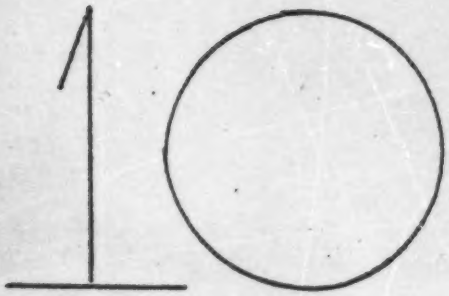
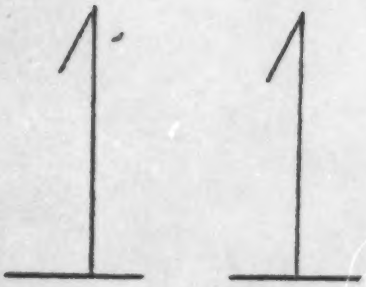


YES

NO



YES

NO

APPENDIX B
THE ITEM CORRELATION - ENTIRE SAMPLE

APPENDIX B

The item correlations for the entire sample grouped according to the original content clusters (decimals omitted, N = 405).

	SOCIAL SKILLS				BELLI-GERENCE		COMPLIANCE				FRIENDS			SELF CONCEPT		MOOD						LOOKS		SMART				
ITEM	19	20	21	22	13	14	15	16	17	18	4	8	10	1	11	23	24	25	26	27	28	3	9	2	5	6	7	12
19	100	12	18	22	15	10	15	-8	13	1	17	-5	22	5	0	-7	7	-8	17	13	16	9	-3	-8	-6	12	11	8
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14	10	-5	9	15	28	100	14	33	6	9	10	1	2	11	11	7	10	8	10	14	1	-3	9	4	2	7	-2	-1
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18	1	-5	-4	-6	8	9	4	25	0	100	0	8	-1	2	14	11	0	13	-11	-2	-1	-4	14	1	1	-12	-1	-1
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APPENDIX C
CONFIRMATORY FACTOR ANALYSIS - ENTIRE SAMPLE

APPENDIX C

Confirmatory factor analysis on the refined clusters for the whole sample (decimals omitted, N = 405).

501 SOCIAL SKILLS (19, 21, 22)
502 BELLIGERENCE (13, 14)
503 COMPLIANCE (15, 17, 16, 18)
504 FRIENDS (4, 10)
505 SELF CONCEPT (1, 11)
506 MOOD (24, 26, 27, 28)
507 RESIDUAL (3, 9, 2, 5, 6, 7, 12, 20, 25, 8, 23)

COMMUNALITY IN THE DIAGONAL

	19	21	22	13	14	15	17	16	18	4	10	1	11	24	26	27	28	3	9	2	5	6	7	12	20	25	8	23	501	502	503	504	505	506	507
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503	13	29	15	27	39	49	29	61	21	16	10	24	17	15	11	16	13	10	26	9	27	15	1	8	-10	12	4	21	38	60	100	25	47	25	50
504	37	24	38	-5	11	28	14	-1	-1	53	53	23	-3	31	47	30	29	26	3	8	14	36	28	29	12	0	-16	-22	67	6	25	100	23	64	48
505	6	5	20	7	25	21	8	29	18	16	8	44	44	0	18	15	2	21	30	19	19	25	2	9	-34	3	0	19	21	29	47	23	100	19	46
506	24	26	43	6	17	24	25	-1	-7	23	45	14	2	49	70	51	44	30	6	1	28	28	17	26	9	-3	-4	-22	63	21	25	64	19	100	46
507	6	12	21	6	11	24	15	31	10	18	32	33	8	27	29	26	17	27	35	45	37	26	7	21	-2	24	6	19	27	15	50	48	46	46	100

APPENDIX D
THE ITEM CORRELATIONS - REDUCED SAMPLE

APPENDIX D

The item correlations on the reduced sample with items grouped according to the original clusters determined by the content analysis (decimals omitted, N = 360).

	SOCIAL SKILLS				BELLI-GERENCE		COMPLIANCE				FRIENDS			SELF CONCEPT		MOOD						LOOKS		SMART				
ITEM	19	20	21	22	13	14	15	16	17	18	4	8	10	1	11	23	24	25	26	27	28	3	9	2	5	6	7	12
19	100	7	11	20	18	18	10	-1	7	6	15	2	16	7	8	0	1	-2	11	9	13	5	5	-1	-8	8	6	6
20	7	100	-3	-4	9	-2	-10	-6	-3	1	3	-2	-2	-11	-16	2	8	-1	-4	3	-7	-5	1	3	-2	5	5	-6
21	11	-3	100	26	7	14	17	7	24	3	8	-10	6	7	8	2	3	-4	8	18	11	9	3	-1	14	15	9	11
22	20	-4	26	100	10	21	17	6	9	1	12	-5	19	12	14	-3	15	-3	19	19	21	6	7	7	15	13	17	15
13	14	9	7	10	100	25	14	13	15	5	7	-4	-2	1	2	-1	8	5	18	11	-4	12	-13	-4	8	14	-9	12
14	18	-2	14	21	25	100	21	27	10	6	10	-4	9	11	5	2	16	3	14	22	6	3	0	1	3	12	2	4
15	10	-10	17	17	14	21	100	36	21	11	14	-1	4	14	11	9	-2	4	10	13	7	0	6	3	12	19	2	9
16	-1	-6	7	6	13	27	36	100	19	19	6	-3	6	20	2	9	6	4	7	9	3	10	13	15	16	11	1	3
17	7	-3	24	9	15	10	21	19	100	4	3	1	2	7	5	11	20	-6	13	7	9	4	7	4	18	13	-5	2
18	6	1	3	1	5	6	11	19	4	100	5	3	9	1	11	2	9	6	-4	5	6	-1	7	-4	6	-9	1	1
4	15	3	8	12	7	10	14	6	3	5	100	-7	19	6	8	-10	10	5	19	4	9	3	9	11	-2	9	13	7
8	2	-2	-10	-5	-4	-4	-1	-3	1	3	-7	100	3	-6	-2	10	11	-7	-3	1	1	2	-3	4	-6	10	-2	-2
10	16	-2	6	19	-2	9	4	6	2	9	19	3	100	14	4	-1	21	9	18	21	12	15	14	8	9	16	8	19
1	7	-11	7	12	1	11	14	20	7	1	6	-6	14	100	18	6	0	5	17	14	8	20	11	6	12	24	2	12
11	8	-16	8	14	2	5	11	2	5	11	8	-2	4	18	100	2	4	-10	7	10	5	-2	7	8	6	4	4	4
23	0	2	2	-3	-1	2	9	9	11	2	-10	10	-1	6	2	100	-2	-1	-3	-2	-11	12	5	7	9	2	6	-1
24	1	8	3	15	8	16	-2	6	20	9	10	11	21	0	4	-2	100	10	30	20	14	6	15	4	14	3	3	12
25	-2	-1	-4	-3	5	3	4	4	-6	6	5	-7	9	5	-10	-1	10	100	12	-1	2	5	12	13	6	8	6	5
26	11	-4	8	19	18	14	10	7	13	-4	19	-3	18	17	7	-3	30	12	100	31	24	17	8	15	12	20	4	7
27	9	3	18	19	11	22	13	9	7	5	4	1	21	14	10	-2	20	-1	31	100	20	21	11	5	7	13	9	12
28	13	-7	11	21	-4	6	7	3	9	6	9	1	12	8	5	-11	14	2	24	20	100	13	13	0	5	7	10	14
3	5	-5	9	6	12	3	0	10	4	-1	3	2	15	20	-2	12	6	5	17	21	13	100	6	14	11	14	3	7
9	5	1	3	7	-13	0	6	13	7	7	9	-3	14	11	7	5	15	12	8	11	13	6	100	25	10	3	8	13
2	-1	3	-1	7	-4	1	3	15	4	-4	11	4	8	6	3	7	4	13	15	5	0	14	25	100	11	11	6	7
5	-8	-2	14	15	8	3	12	16	18	6	-2	-6	9	12	6	9	14	6	12	7	5	11	10	11	100	17	-3	23
6	8	5	15	13	14	12	19	11	13	-9	9	10	16	24	4	2	3	8	20	13	7	14	3	11	17	100	-8	6
7	6	5	9	17	-9	2	2	1	-5	1	13	-2	8	2	4	6	3	6	4	9	10	3	8	6	-3	-8	100	12
12	6	-6	11	15	12	4	9	3	2	1	7	-2	19	12	4	-1	12	5	7	12	14	7	13	7	23	6	12	100

APPENDIX E
CONFIRMATORY FACTOR ANALYSIS - REDUCED SAMPLE

APPENDIX E

Confirmatory factor analysis on the refined clusters for the reduced sample (decimals omitted, N = 360, communalities used).

501 SOCIAL SKILLS (19, 21, 22)
502 BELLIGERENCE (13, 14)
503 COMPLIANCE (15, 17, 16, 18)
504 FRIENDS (4, 10)
505 SELF CONCEPT (1, 11)
506 MOOD (24, 26, 27, 28)
507 RESIDUAL (3, 9, 2, 5, 6, 7, 12, 20, 25, 8, 23)
STANDARD SCORE COEFFICIENT ALPHAS
41. 40. 48. 32. 31. 55. 38.

	19	21	22	13	14	15	17	16	18	4	10	1	11	24	26	27	28	3	9	2	5	6	7	12	20	25	8	23	501	502	503	504	505	506	507
19	11	11	20	18	18	10	7	-1	6	15	16	7	8	1	11	9	13	5	5	-1	-8	8	6	6	7	-2	2	0	31	35	12	33	16	18	11
21	11	18	26	7	14	17	24	7	3	8	6	7	8	3	8	18	11	9	3	-1	14	15	9	11	-3	-4	10	2	41	20	29	15	16	21	18
22	20	26	35	10	21	17	9	6	1	12	19	12	14	15	19	19	21	6	7	7	15	13	17	15	-4	-3	-5	-3	60	30	19	33	28	38	25
13	18	7	10	30	25	14	15	13	5	7	-2	1	2	8	18	11	-4	12	-13	-4	8	14	-9	12	9	5	-4	-1	27	52	26	6	3	17	11
14	18	14	21	25	30	21	10	27	6	10	9	11	5	16	14	22	6	3	0	1	3	12	2	4	-2	3	-4	2	40	52	36	20	18	30	9
15	10	17	17	14	21	33	21	36	11	14	4	14	11	-2	10	13	7	0	6	3	12	19	2	9	-10	4	-1	9	33	33	58	19	28	14	20
17	7	24	9	15	10	21	10	19	4	3	2	7	5	20	13	7	9	4	7	4	18	13	-5	2	-3	-6	1	11	30	23	31	5	13	26	18
16	-1	7	6	13	27	36	19	43	19	6	6	20	2	6	7	9	3	10	13	15	16	11	1	3	-6	4	-3	9	9	37	66	13	25	13	28
18	6	3	1	5	6	11	4	19	5	5	9	1	11	9	-4	5	6	-1	7	-4	6	-9	1	1	1	6	3	2	8	10	22	15	13	8	5
4	15	8	12	7	10	14	3	6	5	24	19	6	8	10	19	4	9	3	9	11	-2	9	13	7	3	5	-7	-10	26	17	16	46	16	21	16
10	16	6	19	-2	9	4	2	6	9	19	24	14	4	21	18	21	12	15	14	8	9	16	8	19	-2	9	3	-1	31	6	12	46	20	36	37
1	7	7	12	1	11	14	7	20	1	6	14	23	18	0	17	14	8	20	11	6	12	24	2	12	-11	5	-6	6	20	12	24	22	46	20	31
11	8	8	14	2	5	11	5	2	11	8	4	18	23	4	7	10	5	-2	7	8	6	4	4	4	-16	-10	-2	2	22	7	17	13	46	14	3
24	1	3	15	8	16	-2	20	6	9	10	21	0	4	18	30	20	14	6	15	4	14	3	3	12	8	10	11	-2	14	22	19	33	5	42	32
26	11	8	19	18	14	10	13	7	-4	19	18	17	7	30	42	31	24	17	8	15	12	20	4	7	-4	12	-3	-3	28	31	15	39	26	66	33
27	9	18	19	11	22	13	7	9	5	4	21	14	10	20	31	24	20	21	11	5	7	13	9	12	3	-1	1	-2	35	32	19	26	26	49	30
28	13	11	21	-4	6	7	9	3	6	9	12	8	5	14	24	20	14	13	13	0	5	7	10	14	-7	2	1	-11	34	2	14	22	15	37	18
3	5	9	6	12	3	0	4	10	-1	3	15	20	-2	6	17	21	13	9	6	14	11	14	3	7	-5	5	2	12	15	14	7	19	20	29	30
9	5	3	7	-13	0	6	7	13	7	9	14	11	7	15	8	11	13	6	13	25	10	3	8	13	1	12	-3	5	11	-13	18	24	20	24	36
2	-1	-1	7	-4	1	3	4	15	-4	11	8	6	8	4	15	5	0	14	25	23	11	11	6	7	3	13	4	7	4	-3	10	20	15	12	48
5	-8	14	15	8	3	12	18	16	6	-2	9	12	6	14	12	7	5	11	10	11	12	17	-3	23	-2	6	-6	9	16	10	29	8	20	20	34
6	8	15	13	14	12	19	13	11	-9	9	16	24	4	3	20	13	7	14	3	11	17	9	-8	6	5	8	10	2	27	25	19	28	31	22	29
7	6	9	17	-9	2	2	-5	1	1	13	8	2	4	3	4	9	10	3	8	6	-3	-8	2	12	5	6	-2	6	24	-7	-1	23	6	13	13
12	6	11	15	12	4	9	2	3	1	7	19	12	4	12	7	12	14	7	13	7	23	6	12	8	-6	5	-2	-1	23	15	8	28	18	23	28
20	7	-3	-4	9	-2	-10	-3	-6	1	3	-2	-11	-16	8	-4	3	-7	-5	1	3	-2	5	5	-6	0	-1	-2	2	0	7	-10	1	-30	0	0
25	-2	-4	-3	5	3	4	-6	4	6	5	9	5	-10	10	12	-1	2	5	12	13	6	8	6	5	-1	4	-7	-1	-6	8	5	14	-5	12	19
8	2	-10	-5	-4	-4	-1	1	-3	3	-7	3	-6	-2	11	-3	1	1	2	-3	4	-6	10	-2	-2	-2	-7	0	10	-9	-7	0	-4	-8	5	2
23	0	2	-3	-1	2	9	11	9	2	-10	-1	6	2	-2	-3	-2	-11	12	5	7	9	2	6	-1	2	-1	10	4	-1	1	18	-12	9	-10	20
501	31	41	60	27	40	33	30	9	8	26	31	20	22	14	28	35	34	15	11	4	16	27	24	23	0	-6	-9	-1	100	64	45	61	46	58	40
502	35	20	30	52	52	33	23	37	10	17	6	12	7	22	31	32	2	14	-13	-3	10	25	-7	15	7	8	-7	1	64	100	59	25	20	45	19
503	12	29	19	26	36	58	31	66	22	16	12	24	17	19	15	19	14	7	18	10	29	19	-1	8	-10	5	0	18	45	59	100	30	45	35	41
504	33	15	33	6	20	19	5	13	15	46	46	22	13	33	39	26	22	19	24	20	8	28	23	28	1	14	-4	-12	61	25	30	100	38	62	57
505	16	16	28	3	18	28	13	25	13	16	20	46	46	5	26	26	15	20	20	15	20	31	6	18	-30	-5	-8	9	46	20	45	38	100	37	37
506	18	21	38	17	30	14	26	13	8	21	36	20	14	42	66	49	37	29	24	12	20	22	13	23	0	12	5	-10	58	45	35	62	37	100	58
507	11	18	25	11	9	20	18	28	5	16	37	31	3	32	33	30	18	30	36	48	34	29	13	28	0	19	2	20	40	19	41	57	37	58	100